

19. The perfusion machine of claim 18 further comprising:
a unit for static monitoring of at least one of an organ and tissue.
20. An organ or biological tissue preservation aqueous machine perfusion solution comprising:
about 100-10,000mcg/L prostaglandin E1;
about 1-15 mg/L nitroglycerin;
about 0.1-5 mg/L N-acetylcysteine;
about 40-160mM sodium gluconate;
about 10-50mM KH_2PO_4 ;
about 1-15mM magnesium gluconate;
about 1-15mM adenine;
about 1-15mM ribose;
about 0.1-2mM CaCl_2 ;
1-30mM HEPES;
about 1-30mM glucose;
about 10-100mM mannitol;
about 40-60g/L pentastarch; and
about 700-900mL sterile water.
21. A method for preserving an organ or biological tissue comprising:
pouring the machine perfusion solution into a chamber that mimics at least one of a deep hypothermic environment and physiological environment, the machine perfusion solution comprising a prostaglandin having vasodilatory, membrane stabilizing, platelet aggregation prevention upon reperfusion, and complement activation inhibitory properties, a nitric oxide donor, and a glutathione-forming agent;
circulating the machine perfusion solution continuously through the chamber;
inserting at least one of a cadaveric organ and tissue into the chamber; and

flushing the at least one of a cadaveric organ and tissue with the machine perfusion solution.

22. The method of claim 21 wherein the flushing comprises:
infusing the solution through vasculature of the at least one of a cadaveric organ and tissue.
23. The method of claim 21 wherein the flushing comprises:
infusing the solution over or through an avascular biological substance of the at least one of a cadaveric organ and tissue to maintain viability during an ex vivo period.
24. The method of claim 21 further comprising:
monitoring parameters of the at least one of a cadaveric organ and tissue.
25. The method of claim 21 further comprising:
exsanguinating the at least one of a cadaveric organ and tissue; and
replacing the machine perfusion solution with at least blood to return the at least one of a cadaveric organ and tissue to a normothermic condition.
26. A method of preparing an organ or biological tissue preservation machine perfusion solution comprising:
providing a solution with sterile water;
adding sodium gluconate, potassium phosphate, adenine, ribose, calcium chloride, pentastarch, magnesium gluconate, HEPES, glucose, mannitol, and insulin to the solution; and
mixing prostaglandin E1, nitroglycerin and N-acetylcysteine into the solution.
27. The method of claim 26 further comprising:
mixing the solution until all components are dissolved.
28. The method of claim 26 further comprising:
infusing the pentastarch under pressure through a dialyzing filter;
centrifuging the prostaglandin E1 under hypothermic conditions; and
filtering the centrifuged prostaglandin E1.